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AUTHOR	Sommers, Dixie
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ABSTRACT

In order to provide more useful and timely occupational information for program development and evaluation, curriculum design, and labor market response to employer needs, the federal Office of Management and Budget has created a standard system of occupational definitions called the Standard Occupational Classification (SOC). Criteria for the SOC require that it cover all occupations in which work is performed for pay or profit; reflect the current occupation structure of the United States and be flexible enough to assimilate new occupations as they become known; and classify occupations based upon work performed, skills, education, training, licensing, and credentials. The SOC defines 821 detailed occupations, organized into a hierarchical structure that includes broad occupations and minor groups and culminates in 23 major groups. The SOC's coding system reflects this four-level hierarchy. The SOC makes several improvements over earlier occupational classifications, including providing a single standard for data collection, more detail, and combinations of similar occupations. New major resources based on the SOC are just beginning to appear. They include the Occupational Information Network (O*NET), the Occupational Employment Statistics Program, the Occupational Outlook Handbook, and state and local information resources. (KC)

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Dixie Sommers

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National Dissemination Center for Career and Technical Education
The Ohio State University
1900 Kenny Road
Columbus, OH 43210-1090

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CTE NATIONAL DISSEMINATION CENTER
THE OHIO STATE UNIVERSITY
1900 KENNY ROAD • COLUMBUS, OH 43210-1090

The Standard Occupational Classification: Improving Information for Career and Technical Education

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by Dixie Sommers

In times of increasing accountability, clear and accurate information about the job market is more important than ever in planning and designing career and technical education (CTE) programs that respond to employer needs. Students exploring education and career options and adults in career transition also need up-to-date, high-quality career information.

Until now, efforts of those who provide occupational information for program development and evaluation, curriculum design, and career exploration have been bogged down by the fact that key information resources used different occupational classification systems. Relating information from various sources has been difficult, frustrating, and time consuming, and the quality of the resulting information has been compromised. The usefulness of the information has also been limited when the occupational classification is out of date and does not reflect the changing nature of work.

These labor market information users will be glad to learn that their work is about to become easier and the information they use is improving. The nation's most widely used occupational information resources are now becoming available, for the first time, based on a standard system of occupational definitions—the Standard Occupational Classification.

All federal information sources are now using the Standard Occupational Classification, or SOC. Many other occupational information providers, including state labor market information programs and private career information developers, are also moving to the SOC to better meet the needs of their customers.

What Is the SOC?

An occupational classification system organizes information about the nature of work, skills and knowledge required to perform the work, employment and wage trends, and a variety of other information into a set of occupation categories.

The Standard Occupational Classification was issued by the federal Office of Management and Budget (OMB), which requires that it be used in all federal occupational data collection activities. The SOC is replacing several classification systems that may be familiar to career and technical educators and career counselors, particularly the ***Dictionary of Occupational Titles***, the Occupational Employment Statistics coding system, the 1990 Census occupational classification, and the little-used 1980 Standard Occupational Classification.

OMB recognized the problem faced by information users in the myriad of incompatible occupational data and the fact that the existing classifications were out of date. The agency chartered a revision committee to develop the new SOC, including establishing classification criteria and providing for public input.

The revision committee adopted several criteria (***Federal Register*** 1999). Of particular interest are the criteria related to coverage, currency, and the basis of classification. These criteria state that the classification should—

- cover all occupations in which work is performed for pay or profit,
- reflect the current occupation structure of the United States and have sufficient flexibility to assimilate new occupations as they become known, and
- classify occupations based upon work performed, skills, education, training, licensing, and credentials.

These criteria provide for a classification that is comprehensive in its coverage of the economy, can be updated without the multiyear wholesale revision process, and defines occupations based on factors of critical interest in career and technical education and work force development in general.

The SOC defines 821 detailed occupations, organized into a hierarchical structure that includes broad occupations and minor groups and culminates in 23 major groups. The coding system reflects this four-level hierarchy. The first two digits of the six-digit code represent the major group. The third digit represents the minor group, the fourth and fifth digits represent the broad occupation, and the sixth digit represents the detailed occupation. Detailed occupations are identified and defined so that each occupation includes workers who perform similar job tasks at similar skill levels. Each detailed occupation has a code, a title, and a narrative definition that describes the major activities performed by workers in the occupation. For some occupations, the definition identifies additional activities that may be performed and credentials or other requirements. If the detailed occupation excludes certain types of workers who are classified in another occupation, the other occupations are mentioned. Finally, illustrative examples of job titles may be mentioned. An extensive list of job titles is available separately (see **Resources**).

Improvements Provided by the SOC

The SOC makes several improvements over earlier occupational classifications. First, as already mentioned, the SOC provides a single standard that will be used in all federal data collection. Occupational information users will benefit from the consequent compatibility of major occupational information resources.

The SOC also provides more detail in several areas to better reflect changes in the labor market where new specialties or entire new occupations have emerged. For example, the previous category "Other Health Professionals, Paraprofessionals, and Technicians" has been redefined to identify several specific occupations, including Respiratory Therapy Technicians, Orthotists and Prosthetists, Occupational Safety and Health Specialists and Technicians, and Athletic Trainers. Employment, wage, and other information will be available for these new occupations.

In some areas, previous occupations have been consolidated to reflect technological change or declining employment. In print-

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ing occupations, for example, the previous occupations Photoengravers, Camera Operators, Scanner Operators, Strippers, Platemakers, and Other Lithography and Photoengraving Workers have been consolidated into a new occupation, Prepress Technicians and Workers.

Although the SOC includes new occupational detail, OMB and the revision committee recognized that the nature of work continues to change, sometimes rapidly, and that some information users need additional occupational detail. They have thus provided flexibility in how the SOC is to be used. For example, data collection agencies may provide additional occupational detail within the SOC structure. In such instances, the SOC recommends using the additional detail contained in O*NET (described in the next section).

Classification systems, by their very nature, lag behind change in the economy. To be added to the classification system governing the wide range of federal data collection programs, an occupation must have emerged and be relatively well defined and stable.

Many users need information about new occupations before they have reached this stage, however. Information providers are using innovative approaches to identifying emerging occupations and capturing information on changing job content and skill requirements for already existing occupations. The SOC's flexibility gives these providers the ability to relate the new jobs and new job requirements to the overall occupational composition of the labor market.

New Information Resources Based on the SOC

Although the SOC has been available as a classification system since 1999, most occupational information based on the SOC is only now appearing. Time has been needed to collect new employment, wage, and other types of data using the SOC classification.

Among the first major information resources issued on the SOC was the Occupational Information Network, or O*NET. O*NET is a detailed database providing information on skills, abilities, knowledge, and many other occupational characteristics, and replaces the *Dictionary of Occupational Titles*. O*NET is available online at <http://www.onetcenter.org/online.html>. O*NET 3.1, which became available in June 2001, is based on the SOC and contains additional detail for 120 of the SOC occupations. For example, for the SOC occupation 17-3012, Electrical and Electronics Drafters, O*NET provides two more detailed breakouts: 17-3012.01, Electrical Drafters, and 17-3012.02, Electronics Drafters.

The Occupational Employment Statistics (OES) program, which provides national, state, and local information on employment and wages by occupation, began collecting data based on the SOC in 1999. The OES survey is conducted annually, with a portion of the economy surveyed each year. Three years are needed to obtain employment and wage information for all sectors covered by the survey. Information based on the SOC is now available from the Bureau of Labor Statistics for 1999 and 2000 at <http://www.bls.gov/oes/home.htm>.

The ***Occupational Outlook Handbook***, widely used in career exploration, uses information from O*NET and the OES program. The 2002-2003 edition of the ***Handbook***, which incorporates the 2000 SOC, was released by the Bureau of Labor Statistics in December 2001 <http://www.bls.gov/oco/home.htm>.

State and local job outlook information based on the SOC, produced by state work force agencies, began to appear in 2001. You can locate your state's products at <http://www.acinet.org/acinet/state1.htm>.

This state and local information, as well as national information from O*NET, the ***Occupational Outlook Handbook***, and elsewhere, will in turn be incorporated into a wide variety of publicly and privately produced career information resources, including computer-based career information systems.

The 2000 Census will provide information on employment, earnings, demographic characteristics of workers, and other items by occupation using the SOC. This information is scheduled to be released in 2002. The Census Bureau also provides an extensive list of over 30,000 individual job titles related to SOC occupations (see **Resources**).

Using the SOC to Relate the Job Market and CTE

Career and technical education programs may prepare individuals for a single occupation or, more often, several occupations. To understand the ties between information on job outlook and skill requirements and CTE programs, "crosswalks" have been developed that link education program classifications and occupational classifications.

New crosswalks files are available that depict the relationship between the 1990 *Classification of Instructional Programs* (CIP) and the SOC. A crosswalk relating military occupations to the SOC has also been prepared.

Resources

General information about the Standard Occupational Classification is available online at the Bureau of Labor Statistics site, <http://www.bls.gov/soc/home.htm>. This site provides the complete list of occupations contained in the SOC, as well as the SOC User Guide and links to ordering information for the print and CD-ROM versions of the SOC. A Spanish version is available at no charge on request to soc@bls.gov.

The full list of occupation titles, along with their SOC occupation assignment, is available on the Census Bureau website at <http://www.census.gov/hhes/www/ioindex.html>.

Crosswalks relating the SOC to the legacy classification systems it replaces, as well as to the CIP and military occupations, are available from the National Crosswalk Service Center at <http://www.state.ia.us/ncdc/>.

The 1990 Classification of Instructional Programs is available from the National Center for Education Statistics, U.S. Department of Education, at <http://nces.ed.gov/ipeds/pdf/webBase2000/cipman.pdf>. A draft 2000 edition is available for comment at <http://nces.ed.gov/npec/papers/cippreface.html>.

Reference

Federal Register, 1998 Standard Occupational Classification, September 30, 1999, pp. 53136-53163.

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